What is claimed is:

1. A receiver that uses multiple antennas to receive signals arriving over multiple paths, which receiver comprises:

receive weight generating means that generates receive weights for every antenna based on signals received from the antennas,

summing means that calculates sums of results obtained by multiplying the signals from the antennas and the receive weights of the individual antennas generated by the receive weight generating means, and

path detection means that detects the paths of the received signals based on the sums calculated by the summing means.

2. A receiver according to claim 1, wherein:

the receive weight generating means generates receive weights for each of multiple paths,

the summing means calculates a sum for each of the multiple receive weights, and

the path detection means detects the paths of the received signals based on the multiple sums calculated by the summing means.

3. A receiver according to claim 2, wherein:

the summing means calculates two or more members among the sum of the leading wave path, the sum of the highest level path, the sum of the lowest level path, and the sum calculated with the average of the receive weights of all paths, and

the path detection means detects the paths of the received signals for every sum produced by the summing means, selects one of the sums produced by the summing means based on a comparison of the detected number of paths and the detected path levels with prescribed conditions relating to these, and detects the received signal paths based on the selected sum.

4. A receiver according to claim 1, wherein the summing means comprises at least one multiplier that time-division multiplies the signals from the antennas and the receive weights of the individual antennas generated by the receive weight generating means and a synthesizer that sums the multiplication results for the individual antennas

produced by the multiplier.

5. A receiver according to claim 2, wherein the summing means comprises at least one multiplier that time-division multiplies the signals from the antennas and the receive weights of the individual antennas generated by the receive weight generating means and a synthesizer that sums the multiplication results for the individual antennas produced by the multiplier.

6. A receiver according to claim 3, wherein the summing means comprises at least one multiplier that time-division multiplies the signals from the antennas and the receive weights of the individual antennas generated by the receive weight generating means and a synthesizer that sums the multiplication results for the individual antennas produced by the multiplier.

7. A receiver according to claim 1 that is a CDMA receiver for receiving CDMA spread spectrum signals over the airwaves, which receiver detects the spread spectrum signals contained in the received signals for every path based on the received signal path detection result.

8. A receiver according to claim 2 that is a CDMA receiver for receiving CDMA spread spectrum signals over the airwaves, which receiver detects the spread spectrum signals contained in the received signals for every path based on the received signal path detection result.

9. A receiver according to claim 3 that is a CDMA receiver for receiving CDMA spread spectrum signals over the airwaves, which receiver detects the spread spectrum signals contained in the received signals for every path based on the received signal path detection result.

10. A receiver according to claim 4 that is a CDMA receiver for receiving CDMA spread spectrum signals over the airwaves, which receiver detects the spread spectrum signals contained in the received signals for every path based on the received signal path detection result.

11. A receiver according to claim 5 that is a CDMA receiver for receiving CDMA spread spectrum signals over the airwaves, which receiver detects the spread spectrum signals contained in the received signals for every path based on the received

signal path detection result.

12. A receiver according to claim 6 that is a CDMA receiver for receiving CDMA spread spectrum signals over the airwaves, which receiver detects the spread spectrum signals contained in the received signals for every path based on the received signal path detection result.

13. A CDMA base station that uses a receiver to receive spread spectrum signals from multiple mobile stations that transmit CDMA spread spectrum signals over the airwaves, detect the received signal paths for every mobile station and detect the spread spectrum signals contained in the received signals for every mobile station and every path based on the detection result, the receiver comprising:

multiple antennas that receive signals arriving over multiple paths,

receive weight generating means that generates receive weights for every antenna based on signals received from the antennas,

summing means that calculates sums of results obtained by multiplying the signals from the antennas and the receive weights of the individual antennas generated by the receive weight generating means, and

path detection means that detects the paths of the received signals based on the sums calculated by the summing means.

14. A CDMA base station that uses a receiver to receive spread spectrum signals from multiple mobile stations that transmit CDMA spread spectrum signals over the airwaves, detect the received signal paths for every mobile station and detect the spread spectrum signals contained in the received signals for every mobile station and every path based on the detection result, the receiver comprising:

N number of antennas constituting an adaptive array antenna, N being greater than 1,

N number of receiver units each associated with one of the antennas,

N number of user separators each associated with one of the antennas,

a user-segregated AAA signal processor and discriminator common to N number of receive paths constituted by the N number of antennas, receiver units and user separators, and

a path detection circuit composed of N number of complex multipliers, a synthesizer, a spreading code generator, a correlator, a delay profile analyzer and a path detector,

in which receiver:

each of the N number of antennas receives wireless signals,

each of the N number of receiver units converts the input signals from the associated antenna from carrier frequency band signals to baseband signals and outputs the converted signals to the associated user separator

each user separator separates the signals from the associated receiver unit into signals of the individual users and individual paths and outputs the separated signals to the user-segregated AAA signal processor and discriminator,

the user-segregated AAA signal processor and discriminator multiplies the user separated signals received from the user separators and individual user receive weights and acquires a synthesized result of the multiplication results as an adaptive array antenna receive result,

the user-segregated AAA signal processor and discriminator further outputs to the respective complex multipliers the obtained receive weights of the individual antennas obtained with respect to the user signals whose delay profiles are to be next analyzed by the path detection circuit,

the complex multipliers of the path detection circuit multiply the signals received from the associated receiver units and the receive weights of the associated antennas A1 - AN received from the user-segregated AAA signal processor and discriminator and output the multiplication results to the synthesizer,

the synthesizer synthesizes the N number of multiplication results received from the N number of complex multipliers and outputs the synthesis result to the correlator,

the spreading code generator generates user-specific spreading codes defined for the respective users and outputs the generated spreading code to the correlator,

the correlator correlates the signal received from the synthesizer with the spreading code received from the spreading code generator and outputs the correlation

result to the delay profile analyzer,

the delay profile analyzer acquires a time-averaged delay profile by averaging the correlation result received from the correlator over time and outputs the averaged delay profile to the path detector, and

the path detector defines averaged data portions of the averaged delay profile received from the delay profile analyzer that exceed a prescribed threshold as autocorrelation peaks and averaged data portions thereof that do not exceed the prescribed threshold as noise portions, thereby distinguishing between paths and noise to enable detection of path arrival times.

15. A CDMA base station according to claim 14, wherein application of receive weights to the path detection circuit is changed among a method of applying a receive weight obtained with respect to the path that leads in the delay profile, applying a receive weight obtained with respect to the path whose autocorrelation peak has the highest level in the delay profile, applying a receive weight obtained with respect to the path whose autocorrelation peak has the lowest level in the delay profile, and applying an average value of the receive weights obtained for all paths

16. A CDMA base station according to claim 14, comprising a receive weight multiplication and synthesis circuit section equipped with a first multiplexer, second multiplexer, complex multiplier, synthesizer, delay element and switch, wherein the first multiplexer converts N number of parallel signals received from the N number of antennas to N-fold faster serial signals and outputs the serial signals to the complex multiplier, the second multiplexer receives receive weights corresponding to the individual antennas, converts them to N-fold faster serial signals and outputs the serial signals to the complex multiplier, the complex multiplier outputs the result of multiplying the signals received from the first multiplexer and the signals received from the second multiplexer to the synthesizer, the synthesizer outputs the result of synthesizing the multiplication result received from the complex multiplier and the output of the delay element, the switch closes once for each period of the N number of antennas, opens within the same period to return the output of the synthesizer to the synthesizer via the delay element when the switch is open, and closes to make

determinate and output the data of N number of cumulative syntheses.

17. A CDMA base station according to claim 15, comprising a receive weight multiplication and synthesis circuit section equipped with a first multiplexer, second multiplexer, complex multiplier, synthesizer, delay element and switch, wherein the first multiplexer converts N number of parallel signals received from the N number of antennas to N-fold faster serial signals and outputs the serial signals to the complex multiplier, the second multiplexer receives receive weights corresponding to the individual antennas, converts them to N-fold faster serial signals and outputs the serial signals to the complex multiplier, the complex multiplier outputs the result of multiplying the signals received from the first multiplexer and the signals received from the second multiplexer to the synthesizer, the synthesizer outputs the result of synthesizing the multiplication result received from the complex multiplier and the output of the delay element, the switch closes once for each period of the N number of antennas, opens within the same period to return the output of the synthesizer to the synthesizer via the delay element when the switch is open, and closes to make determinate and output the data of N number of cumulative syntheses.

18. A path detector that detects paths of signals received by multiple antennas via multiple incoming paths, which path detector detects the paths of received signal based on sums of multiplication results obtained by multiplying signals received from the antennas and receive weights for the individual antennas.

19. A path detection method that detects paths of signals received by multiple antennas via multiple incoming paths, which path detection method detects the paths of received signal based on sums of multiplication results obtained by multiplying signals received from the antennas and receive weights for the individual antennas.